# A REPRESSOR MEDIATED REGULATION SYSTEM FOR CONTROL OF GENE EXPRESSION IN PLANTS

## ABSTRACT OF THE DISCLOSURE

The invention provides a method for selectively controlling the transcription of a gene of interest, comprising producing one or more plants that express either a first, a second, or both the first and second genetic constructs. The first genetic construct comprises a first regulator region operatively linked to a gene of interest and at least one repressor sequence capable of controlling the activity of the first regulatory region. The second genetic construct comprises a second regulator region in operative association with a nucleic acid molecule, or a derivative thereof, encoding a repressor protein, the repressor protein exhibiting both repressor operator sequence binding activity and repressor activity. The first and second genetic constructs may reside on separate vectors, or the vector may comprise both the first and second genetic constructs comprised as just defined. If the first and second constructs reside within separate plants, then the first plant and the second plant are crossed to obtain progeny, so that the progeny comprise both the first genetic construct and the second genetic construct. The progeny of this cross are characterized in that the expression of the second genetic construct represses expression of the gene of interest. The first and second regulatory regions may be either the same or different and may be selected from the group consisting of a constitutive promoter, an inducible promoter, a tissue specific promoter, and a developmental promoter. If the plant comprises the vector that comprises both the first and second genetic construct, or if a plant has been co-transformed with the first and second genetic construct so that both the first and second genetic constructs may be expressed in the same plant, then it is preferred that the first and second regulatory regions are different. The first regulatory region may comprise a constitutive promoter, an inducible promoter, a tissue specific promoter, or a developmental promoter. The second regulatory region may comprise an inducible promoter, a tissue specific promoter, or a developmental promoter.